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(PATENT APPLICATION)**

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**TC 1700**

Application of: Charles J. Kuehmann, et al.

Application No.: 10/071,688

Filing Date: February 8, 2002

Title: NANOCARBIDE PRECIPITATION STRENGTHENED ULTRAHIGH-STRENGTH, CORROSION RESISTANT, STRUCTURAL STEELS

Transmitted herewith are the following documents:

- ☒ Transmittal Form (2)
- ☒ Information Disclosure Statement Pursuant to 37 C.F.R. § 1.97 and 1.98
- ☒ PTO Form 1449 (3 pages)
- ☒ Copy 42 Cited References
- ☒ Return Postcard

Attorney Case No.: 04019.00021



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PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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|--|------------------------|---------------------|
| <b>TRANSMITTAL FORM</b><br><i>(to be used for all correspondence after initial filing)</i> | Application Number     | 10/071,688          |
|  | Filing Date            | February 8, 2002    |
|  | First Named Inventor   | Charles J. Kuchmann |
|  | Group Art Unit         |                     |
|  | Examiner Name          |                     |
| Total Number of Pages in This Submission   | Attorney Docket Number | 004019.00021        |

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| Remarks  |   | <b>Copy 42 Cited References</b><br>If there are any fees associated with this submission, please charge our Deposit Account No. 19-0733 for the transaction.  |

| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |                                  |
|--|----------------------------------|
| Firm or Individual name                    | Jon O. Nelson<br>Reg. No. 24,566 |
| Signature                                  |                                  |
| Date                                       | July 18, 2002                    |

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EV05508879US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
Attorney Docket No. 004019.00021

PATENT

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TC 1700

In the Application of:

Charles J. Kuchmann et al.

Serial No.: 10/071,688

Filed: February 8, 2002

For: NANO-PRECIIPITATION  
STRENGTHENED ULTRA-HIGH  
STRENGTH CORROSION RESISTANT  
STRUCTURAL STEELS

Group Art Unit

INFORMATION DISCLOSURE STATEMENT  
PURSUANT TO 37 C.F.R. SECTIONS 1.97 AND 1.98

Assistant Commissioner for Patents  
Washington, DC 20231

Dear Sir:

Pursuant to 37 C.F.R. Sections 1.97 and 1.98, the Applicants wish to make the following references of record in the above-identified application. This Information Disclosure Statement is in compliance with the continuing duty of candor as set forth in 37 C.F.R. Section 1.56. Copies of the references cited below are enclosed. The references are also listed on the enclosed and completed PTO Form 1449.

U.S. Patents

1. Patent No. 3,756,808, issued September 4, 1973.
2. Patent No. 3,873,378, issued March 25, 1975.

BANNER & WITCOFF, LTD.  
Ten South Wacker Drive  
Chicago, Illinois 60606  
(312) 715-1000

3. Patent No. 4,585,479, issued April 29, 1986.
4. Patent No. 4,846,904, issued July 11, 1989.
5. Patent No. 4,902,472, issued February 20, 1990.
6. Patent No. 5,017,246, issued May 21, 1991.
7. Patent No. 5,049,210, issued September 17, 1991.
8. Patent No. 5,152,848, issued October 6, 1992.
9. Patent No. 5,284,530, issued February 8, 1994.
10. Patent No. 5,358,577, issued October 25, 1994.
11. Patent No. 5,433,798, issued July 18, 1995.
12. Patent No. 5,714,016, issued February 3, 1998.
13. Patent No. 5,716,465, issued February 10, 1998.
14. Patent No. 5,746,845, issued May 5, 1998.
15. Patent No. 5,820,699, issued October 13, 1998.
16. Patent No. 5,824,264, issued October 20, 1998.
17. Patent No. 5,849,111, issued December 15, 1998.
18. Patent No. 6,110,421, issued August 29, 2000.
19. Patent No. 6,129,999, issued October 10, 2000.
20. Patent No. 6,146,475, issued November 14, 2000.
21. Patent No. 6,159,311, issued December 12, 2000.
22. Patent No. 6,210,806 B1, issued April 3, 2001.
23. Patent No. 6,332,934 B2, issued December 25, 2001.

## **Foreign Patents**

1. WO 97/12073, published April 3, 1997.
2. WO 98/10112, published March 12, 1998.
3. WO 99/07910, published February 18, 1999.
4. WO 99/36584, published July 22, 1999.
5. WO 00/26428, published May 11, 2000.
6. WO 00/53821, published September 14, 2000.
7. WO 00/65120, published November 2, 2000.
8. WO 01/10591 A1, published August 7, 2000.
9. WO 01/79576 A1, published September 25, 2001.
10. WO 01/31076 A1, published May 3, 2001.
11. WO 01/40526 A1, published June 7, 2001.

## **Other Prior Art – Non Patent Literature Documents**

1. Aerospace Material Specification AMS 6257A, 2001, SAE International, Warrendale, PA.
2. Philip, T.V. and McCaffrey, T.J., Ultrahigh-Strength Steels, Properties and Selection: Irons, Steels and High-Performance Alloys, 1990, 1: 430-448, ASM International, Materials Park, OH.
3. 15-5PH, AMS 5659K, 1998, SAE International, Warrendale, PA.
4. Carpenter Custom 465™, Alloy Digest, 1998, SS-716, ASM International, Materials Park, OH.
5. Kimmel, W.M., Kuhn, N.S. et al., Cryogenic Model Materials, 39<sup>th</sup> AIAA Aerospace

Sciences Meeting & Exhibit, 2001, Reno, NV.

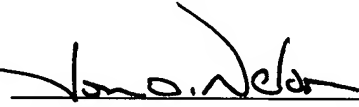
6. ASTM E 112 [ASTM, ASTM E-112-96, West Conshocken, PA, 1996].
7. Olson, G.B., "Computational Design of Hierarchically Structured Materials", Science 277, pp. 1237-1242, 1997.
8. Campbell, C.E., "Systems Designed of High Performance Stainless Steels", materials Science and Engineering, Ph.D. Dissertation, Northwestern University, 243 pages, 1997.

Respectfully submitted,

BANNER & WITCOFF, LTD.

Date: July , 2002

By:



Jon O. Nelson

Reg. No. 24,566

BANNER & WITCOFF, LTD.  
Ten South Wacker Drive  
Chicago, Illinois 60606  
(312) 715-1000